

ast century, the capital of a few noblemen has grown into leasehold principalities, and so well has the leasing practice told, that the body of moneyed oligarchs, compacted on a system, have engrossed pretty well all the *fixed capital* of the community so far as London is concerned.

The means of the multitude have been expended in fabrics, only to flow, through the lapse of two, or at most three generations, into the ocean (I fear not the Pacific one) of aristocratic abundance.

Surely this is not a beneficial result, that the few should be enriched and the multitude impoverished.

The greatest good for the greatest number is a modern maxim, but so rooted is the principle we are speaking of, and so systematized, that the people have no power to redress it. If one man object to three or five guineas a-foot, for building plots, besides paying largely for the old structure, another will be found to outlay his principal on the alluring site, and the landlord has the legal right to reserve or forestall. It is a LEAGUE (the league of wealth and power) against the nation, and nothing but an enactment of the Legislature can correct or redress it.

As your article of the 15th stated, Parliament found no difficulty in passing a law to enfranchise copyholds, because that grievous description of tenure affected the landed estates of the legislators. Copyholds were as much a private right of property as leaseholds, and there can be no just reason for continuing the widely injurious tenure on leases, any more than the now antiquated custom of exacting fines and heriots on the alienation of lands, or on the death of their proprietors.

As the enfranchisement of a copyhold tenure may be fairly estimated and requited in a money payment, so may the interest in a lease be estimated by a valuation jury, or by any other equitable mode of purchase.

To the tenant in most instances the purchase would be an object of the deepest interest, while the lessor could not complain, as he too should have his equivalent in money to invest at large; and although perhaps not over one fourth part of the leaseholders would purchase the freehold of their occupations; still the practice of leasing out plots anew for building, on an extensive scale, would, by this plan, be effectually checked.

Of all the advantages, however, that must ensue from such an enfranchisement, the greatest would be the diffusion of fixed capital, the next the estoppel of the frightful concentration of property in a few noble families, who must in one more generation clutch within their grasp the heritage of the dispossessed families of London!

It must be apparent that the desired enfranchisement of leases will have the happiest influence on architecture—that substantiality will supersede economy, haste, and insecurity—that an Englishman may truly call his house his castle, and that the arts will be encouraged and exhibited in embellishment.

QUONDAM.

LIVERPOOL ARCHITECTURAL AND ARCHEOLOGICAL SOCIETY.—A meeting of this society was held on the 20th December, Mr. J. A. Picton, vice-president, in the chair, when a paper was read by Mr. Hornblower on "Constructive Carpentry." The chairman observed, in pointing to various drawings and models, that lessons could be drawn from the defects as well as from the excellencies of the designs presented. Pointing to the roof of St. Paul's, Covent Garden, by Inigo Jones, he said that its construction was very poor indeed, and proved that Jones was no carpenter. He then called attention to the scientific principles upon which the old roofs were constructed, and observed the peculiarity that there was scarcely ever any iron used. Mr. Hay explained the causes of the failure of the roof of St. Peter's Church, at Rock Ferry. Mr. Reed explained the raising of the Egyptian obelisks, executed in Hindostan 80 or 90 years ago, witnessed and recorded by

## LECTURE ON HERALDRY.

Mr. W. PARTRIDGE has recently delivered some lectures on heraldry at various institutions, with the view chiefly of shewing that a knowledge of armorial ensigns is not solely the province of the antiquary or archaeologist, but is important as a branch of general knowledge, and has a direct bearing on accuracy of taste in many of the arts and manufactures.

After noticing the discordant opinions respecting the origin of heraldry, some seeing the origin of it in the Phonetic alphabets of ancient India, others in the old Mexican sculptures, or in the double shields of Egypt, while others allow it to be not older than the Crusades, he traced it to the necessity for modes of distinction in the early stages of society, for the sake of order and discipline. He then took the two prominent features of heraldry, viz. shields and banners; the shield from its first and simplest construction among the early Greeks, its various shapes, sizes, and materials, from the fabulous, but magnificent shield of Achilles, by Homer.

"The immense and solid shield,  
Rich, various artifice emblazed the field,"

down through the historic periods of Greece and Rome to the middle ages, showing the subject to be closely blended with the state of the arts and manufactures in all these ages and countries, and alluding to the superb shield made recently as a present from the King of Prussia to the Prince of Wales.

The banners of various ages, Pagan and Christian, the several abbeyes, the crusades, rival roses, tournaments, chivalry, and the important uses of heraldry in war, in property, as a key to architecture, history, and poetry, are intimately mixed up with the progress of every age, shewing the importance of accuracy in all works, and the want of such knowledge in some glaring instances in architecture and painting. In some of the latter, the period of history intended was falsified, and in the former the effect of the edifice often injured by the heraldic devices being both ill designed and incorrect in themselves; making the importance of the subject even to practical men apparent.

## LIME-ASH FLOORS FOR LABOURERS' COTTAGES.

THE following letter from Sir Shafto Adair to Mr. Henry Roberts, the honorary architect of the Society for the Improvement of the Condition of the Labouring Classes, contains a detailed statement of the mode adopted in Somersetshire, of forming lime and sand floors for farm-houses and cottages in agricultural districts:—

"I have received the particulars of the mode of forming the stucco floors for farm-houses and cottages, employed in Somersetshire, and supposing it may form an useful addition to your valuable suggestions for building labourers' cottages, I take the liberty of transmitting it to you. My informant is Mr. John Easton, an intelligent farmer, residing in the parish of Bradford, near Taunton.

*Directions for making.*—Take good washed sand, free from all earth, and the ashes of lime, as taken from the lime-kiln, in the following proportions, viz.—Two-thirds sand, and one-third lime-ashes. Mix them well together and let them remain in a body for three days, then temper the mortar, and form the floor with it, three inches thick; let this remain so formed three days, when it will bear treading by men: their shoes must be without nails. After it is well and equally trodden, beat it with a flat wood mallet every day for two weeks, until it is become hard, then use a little water on the surface, and smooth it with a trowel; after this keep the floor free of dirt or dust, sweeping it with a brush till it is quite hard and solid. I have known our best floors last for forty years. The price we pay is 5d. per square yard (9 feet) for labour, and 8d. per yard for materials; altogether, 1s. 1d."

\* A correspondent suggests that if a portion of powdered coke were used with the lime-ashes, it would render the floor exceedingly hard and durable.—E.D.

## THE BOSTON AQUEDUCT.

ON 25th October last, the extensive works for the conveyance of water from lake Cochituate (or Koo-chee-awa, an aboriginal term for "clear, beautiful, water"), to Boston, a distance of nearly 20 miles by the usual route, were so nearly completed that the water was formally let on with great ceremony, through an ornamental fountain at Boston common, when it immediately sprang to a height of nearly 80 feet, amidst the gratulations of an immense multitude, assembled from all parts of the state of Massachusetts, and even of new England throughout. The day was one of jubilee, opening with the sound of bells and cannon, followed by military reviews, and civilian processions through triumphal arches, and closing with the spectacle of fireworks and illuminated fountains.

The undertaking was begun only two years and two months before, and was deemed one of peculiar difficulty. Indeed, it was only by the unintermitted labours of 3,500 men, chiefly Irish,—labourers, bricklayers, masons, blacksmiths, &c., inclusive,—most of whom carried on their labours, by turns of eight hours, night and day, that the difficulties were overcome and the work accomplished. One of the chief obstacles consisted of a long extent of quick-sands, in the valley of the Snake brook, where five steam-engines, capable of raising 12,000,000 gallons 10 feet high in twenty-four hours, have been in constant employment. Another heavy labour in the same section of the contract consisted in the hardness of the porphyritic rock, which was estimated to have required seven times the usual quantity of powder and of labour in rock excavation. A work of still greater difficulty consisted of tunnel-excavation through two hills of equally hard rock, with water perpetually flowing through its seams and rents. The two tunnels measure 3,500 feet in length, and were excavated in eighteen months, through shafts seventy to seventy-five feet in depth, and by help of steam power.

The culvert is a brick oval in hydraulic cement, 6 feet 4 inches in height, and nearly 15 miles in length, extending only from the lake gate-house, which is of granite, to Brookline, where it ends in a reservoir of granite, whence the water is carried through cast-iron pipes to the town reservoirs. The other works in masonry are chiefly in granite, plain, but substantial. At Charles River, the aqueduct descends and re-ascends in form of two inverted syphons, connected with gate-houses on each height, and with a waste weir at the low level. Both culverts and pipes are principally under ground. The fall, throughout, is only about 3 inches to the mile; and the flow about 1½ mile an hour. For further particulars as to the works extending from the culvert at Brookline to Boston, including the reservoirs at the termination, some of which stand at an elevation nearly as high as that of the lake itself, and whence the water will be forced by its own pressure through the highest building in the city,—we must refer to THE BUILDER, vol. v. p. 618. One of the reservoirs will contain two weeks' supply for the whole city, while the aqueduct is capable of discharging more than ten millions of gallons a day.

The small pipes which are to be run into each house at the public expense, and of which about 100,000 feet were laid at the opening, are of lead; and as the water is said to be of remarkable purity, it is to be hoped, that the prudence of thus using a metal so apt to be acted on by water in the direct ratio of its purity has been well tested.

About three millions of dollars have been expended on these works, and about half a million more will be requisite to complete the reservoirs and distribute the water at South Boston. The town lands, it is said, will redeem the whole expense in a few years, independent of the rate charged to individuals, which is to be a very low one, till altogether withdrawn, as it is intended ultimately to be, if not deemed requisite as a source of increased income to the city.

The chief engineer of the main division of the works, namely, between the lake and Brookline, was Mr. E. S. Chesbrough, of Newton: resident engineer, Mr. McKean.

